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March 19, 1996

VIA MESSENGER

The Honorable William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C. 20554

RECEIVED

MAR 19 1996

**FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY**

Re: ET Docket No. 94-124
Amendment of Parts 2, 15, and 97 of the
Commission's Rules to Permit Use of Radio
Frequencies Above 40 GHz for New Radio
Applications

Dear Mr. Caton:

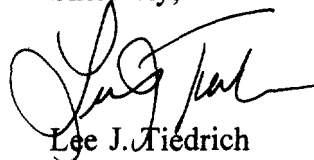
On Friday March 15th, counsel for Sky Station International, Inc. ("Sky Station") met with Cecily C. Holiday, Thomas Tycz, Audrey L. Allison and Damon C. Ladson of the FCC's International Bureau, to discuss the authorization of a Global Stratospheric Telecommunications Service using spectrum proposed for millimeter wave operations in the above-referenced proceeding. The discussion focused on the issues outlined in the attached materials which were provided during the presentation. Please associate these materials with the above-referenced proceeding.

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The Honorable William F. Caton
March 19, 1996
Page Two

Any questions concerning this matter should be addressed to Paul Mahon of Mahon & Patusky at (202) 483-4000 or Lee J. Tiedrich of Covington & Burling at (202) 662-5403.

Sincerely,



Lee J. Tiedrich

LJT/djw
Attachment

cc: Cecily C. Holiday
Thomas Tycz
Audrey L. Allison
Damon C. Ladson

Sky Station International Inc.

Regulatory Briefing



GSTTS: Global Stratospheric Telecommunications Service

...a *Radio communications service* between
stratospheric stations and any combination of
mobile stations and *fixed stations*, with such service
intended for capability of operation beyond the
geographical limits of a country or continent.



Stratospheric Station: A station located at a fixed position in the stratosphere

The stratosphere is the second layer of the Earth's atmosphere, located between the troposphere and the mesosphere. It extends from approximately 10 to 50 kilometers above the Earth's surface. The stratosphere is characterized by a temperature inversion, where the temperature increases with altitude. This is due to the absorption of ultraviolet radiation by ozone molecules. The stratosphere is also the region where the ozone layer is located, which plays a crucial role in protecting the Earth's surface from harmful ultraviolet radiation. A station located in the stratosphere would provide a unique perspective on the Earth's atmosphere and the environment. It would be able to observe the Earth's surface and the surrounding space from a high altitude, providing valuable data on the atmosphere's composition, structure, and dynamics. Such a station could also be used for scientific research, including the study of the ozone layer, the effects of climate change, and the behavior of the Earth's magnetic field. The stratosphere is a relatively quiet and stable environment, making it an ideal location for a station. It is free from the turbulence and weather conditions found in the troposphere, and it is not affected by the ionospheric disturbances that can occur in the mesosphere. A station in the stratosphere would have a long operational life, as it would not be subject to the same wear and tear as a station on the ground. It would also be able to observe the Earth's surface and the surrounding space from a high altitude, providing valuable data on the atmosphere's composition, structure, and dynamics. Such a station could also be used for scientific research, including the study of the ozone layer, the effects of climate change, and the behavior of the Earth's magnetic field.



Initial Research

The initial research phase of the project involved a thorough review of the literature and a series of interviews with experts in the field. The goal was to identify the key issues and challenges associated with the problem at hand. This phase also involved the development of a conceptual framework and the identification of the variables to be studied.

The research was conducted in a systematic and rigorous manner, following the principles of scientific inquiry. The data collected was analyzed using a variety of statistical techniques, and the results were interpreted in the context of the research objectives. The findings of the initial research phase are presented in the following sections.

Initial Research

Bandwidth to user

Medium

Low

Initial Research

Initial Research

Initial Research



Initial Research



Service Requirements

- 300 times user bandwidth (2.100 cells) for dedicated channels
- Timeslot divided by 70 KHz
- 100 times user bandwidth (700 cells) for dedicated channels
- 100 times guardband width
- 300 (140 MHz/70 KHz) = 600 (600 subscribers per cell)
- 600,000 Subscribers at 0.1 Erlangs
- 2,000,000 Platform Capacity times 200 = 400,000,000 Subscribers Worldwide



Why Stratospheric Platforms?

- Stratospheric Platforms are old idea
- New technology using GPS makes platforms practical
Fixed location over earth platforms practical
- New composite materials and electronics make long duration (10 years) and high capacity communications practical
- Concepts like Iridium and Teledesic validated the Global Wireless market



1999

2000

2001

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2004

1%

20%

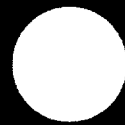
40%

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90%

GSTS
Complete



Coverage of world's population



47.2 - 47.5 GHz (Earth-to-Stratosphere) 47.9 - 48.2 GHz (Stratosphere-to-Earth)

Current Allocation: 47.2 - 50.2 GHz is allocated to Fixed Mobile, Fixed Satellite (Earth-to-Space)

Proposed FCC Allocation: 47.2 - 48.2 GHz should be limited to licensed millimeter wave services

Our Proposal:

- 1. Revise footnotes 901 and US297 to limit use of required sub-bands to GSTS**
- 2. Create rules for a GSTS**

Region 1 Region 2 Region 3

47.2 50.2

FIXED

FIXED-SATELLITE Earth-to-space

MOBILE 905

904

Government
Allocation

FIXED

FIXED-SATELLITE

(Earth-to-space)

MOBILE

US264, US297, 904

Non-Government
Allocation

FIXED

FIXED-SATELLITE

(Earth-to-space)

MOBILE

US264, US297, 904

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Use of the bands 47.2 - 47.5 GHz (Earth-to-stratosphere) and 47.9 - 48.2 GHz (stratosphere-to-earth) by the fixed service and by the mobile service is limited to ground-to-stratospheric telecommunications service. Stations in the fixed-satellite service may be operated subject to the avoidance of harmful interference to the global stratospheric telecommunications service.

Administrations are urged to take all practical steps to reserve the band 47.5 - 47.9 GHz and 48.2 - 49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5 - 42.5 GHz.



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THE
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UNITED STATES DEPARTMENT OF JUSTICE
WASHINGTON, D. C. 20535

MEMORANDUM FOR THE DIRECTOR, FBI

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DATE: [Illegible]

TO: [Illegible]

FROM: [Illegible]

RE: [Illegible]

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- Cash in bank for first n sky stations
- Meet foreign ownership limitations
- Agreement to international coordination and national authorization constraints





- Get GITS definitions and revision of footnote 29 on the agenda for WRC-97
- Issue NPRM to establish rules for mobile VLF/GS in the existing fixed/mobile allocation table, including revision of footnote US29
- Authorize Sky Station International LLC to begin constructing and operating a GITS in its own risk (Experimental service in the DC-NY corridor)

